08-30-00

08/29/00

UTILITY PATENT APPLICATION TRANSMITTAL

(for Noncontinuing, Nonprovisional Applications under 37 C.F.R. §1.53(b))

Attorney Docket No. 11748/00005



	PATENT APPLICATION)				
Comm	issioner of Patents and Trademarks	CERTIFICATE OF MAILING BY "EXPRESS MAIL"				
	NTION: Assistant Commissioner) "Express Mail" Mailing Label Number				
	r Patents	EL698010111US				
wasn.	ington, D.C. 20231	Date of Deposit August 29, 2000				
Sir:		I hereby certify that this paper or fee is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" Service under 37 CFR §1.10 on the date indicated above and				
Tran	smitted herewith for filing) is addressed to the Commissioner of Patents and				
	r 37 C.F.R. §1.53(b) is the	´ Trademarks, Washington, D.C. 20231.)				
nonp	rovisional, noncontinuing) Molly Michaels (Typed or printed name/of person mailing)				
pate	nt application for:	Malli Michael				
mi + 1.	a CODITION TO MEDITAL DAD ON CONTROL	(Signature of person mailing)				
	e: STRUCTURE AND METHOD FOR SELECTING, ROLLING AND SENDING INTERNET-BASED OR	²				
towards.	L DIGITAL AUDIO IN AN AM/FM RADIO OR	•				
: F E	OG CONVERTER) }				
J. V.	OG CONVERTER))				
Firs	t Named Inventor or)				
122	ication Identifier: Gladwin, et al.)				
	9 pages of the specification (incl	uding claims) are enclosed.				
Ų,		od () Formal (V) Informal				
	sheet (s) of drawings are enclose	ed. () Formar (A) Informar				
ΞX)	An executed Oath or Declaration and Power of Attorney naming the actual inventors is enclosed.					
	actual inventors is encrosed.					
()	The names of persons believed to be the actual inventors are set forth in the enclosed unexecuted Oath or Declaration and Power of Attorney ($\S1.41(a)$ and $\S1.53(b)$).					
(X)	An Assignment(s) of the invention to_	Full Audio Corporation ,				
	and cover sheet are enclosed.					
(37)	The character is the amount of \$40.00 to a					
(X)	A check in the amount of $$40.00$ to cassignment(s) is enclosed.	over the fee for recording the				
()	A 37 C.F.R. §3.73(b) Statement is enclosed (where an Assignee seeks to take action in a matter before the Patent Office).					
()	An Information Disclosure Statement i	s enclosed.				
	() A Form PTO-1449 is enclosed.					
	() References (copies) li	sted on the Form PTO-1449 are				

enclosed.

(X)	A Return Receipt Postcard is enclosed (MPEP §503).
(X)	Priority of application number 60/151,714 filed on August 31, 1999 in the United States Patent and Trademark Office is claimed under 35 U.S.C. §119.
	() A certified copy of the priority document is enclosed.
()	A MicroFiche Computer Program (Appendix) is enclosed.
()	A Nucleotide and/or Amino Acid Sequence Submission is enclosed.
	() A Computer Readable Copy is enclosed.
Total Control	() A Paper Copy (Identical to Computer Copy) is enclosed.
C T T T T T T	() A Statement Verifying Identity of above Copies is enclosed.
<u>П</u> (х)	The filing fee is calculated below:
	Fee Calculation For Claims As Filed
	(a) Basic Fee \$ 690.00
	(b) Independent Claims $1 - 3 = 0 \times $78.00 = 0.00
And State of the Control of the Cont	(c) Total Claims $9 - 20 = 0 \times $18.00 = 0.00
	(d) Fee for Multiply Dependent Claims \$260.00 \$
	Total Filing Fee \$_690.00
(X)	A Statement(s) of Status as Small Entity is enclosed, reducing the Filing Fee by half to: \$\\\345.00\\\
()	A check in the amount of $$345.00$ to cover the filing fee is enclosed.
()	Charge \$ to Deposit Account No. 50-1214.
()	The payment of the Filing Fee is to be deferred until the Declaration is filed. Do not charge our Deposit Account.
()	A separate written request under 37 C.F.R. §1.136(a)(3), which is a general authorization to treat any concurrent or future reply requiring a petition for an extension of time under 37 C.F.R. §1.136(a) for its timely submission as incorporating a petition

for an extension of time for the appropriate length of time, is

enclosed.

- (X) The Commissioner is hereby authorized to charge any additional fees which may be required in this application under 37 C.F.R. §§1.16-1.17 during its entire pendency, or credit any overpayment, to Deposit Account No. 50-1214. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 50-1214. This sheet is filed in triplicate.
- () Also enclosed:
- (X) Address all future communications to

John S. Paniaguas
KATTEN MUCHIN ZAVIS
Suite 1600
525 West Monroe Street
Chicago, Illinois 60661
Tel: (312) 902-5312

Fax: (312) 577-4532

29 Ang 2000

Date)

John S. Paniaguas

Registration No. 31,051

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s) or Patentee(s): Full Audio Corporation

Application No. or Patent No.: Herewith

Filed or Issued:

Herewith

For: STRUCTURE AND METHOD FOR SELECTING, CONTROLLING AND SENDING INTERNET-BASED OR LOCAL DIGITAL AUDIO TO AN AM/FM RADIO OR ANALOG CONVERTER

Group Art Unit:

N/A

Examiner:

N/A

VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY STATUS (37 C.F.R. §§1.9(f) and 1.27(c)) - SMALL BUSINESS CONCERN

hereby declare that I am:

- (X) the owner of the small business concern identified below:
- () an official of the small business concern empowered to act on behalf of the concern identified below:

NAME OF CONCERN <u>Full Audio Corporation</u>

ADDRESS OF CONCERN <u>247 South State Street</u>, <u>Suite 1220</u>

Chicago, IL 60604

I hereby declare that the above-identified small business concern qualifies as a small business concern as defined in 37 C.F.R. §1.9(d) and in 13 C.F.R. Part 121 to be eligible for reduced patent fees under Section 41(a) and (b) of Title 35, United States Code, in that the number of employees of the concern, including those of its affiliates, does not exceed 500 persons, and that the concern has not assigned, granted, conveyed or licensed (and is under no obligation to do so) any rights in the invention to any person who made it and could not be classified as an independent inventor, or to any concern which would not qualify as a non-profit organization or a small business concern under 13 C.F.R. §121.802. For purposes of this statement, (1) the number of employees of the business concern is the average over the previous fiscal year of the concern of the persons employed on a full-time, part-time or temporary basis during each of the pay periods of the fiscal year, and (2) concerns are affiliates of each other when either, directly or indirectly, one concern controls or has the power to control the other, or a third party or parties controls or has the power to control both.

I hereby declare that rights under contract or law have been conveyed to and remain with the small business concern identified above with regard to the invention, entitled Structure and Method for Selecting, Controlling and Sending Internet-Based or Local Digital Audio to an AM/FM Radio or Analog Converter by inventor(s) S. Christopher Gladwin, Depend Bi, Jeffrey J. Spurgat and Michael Cortopassi described in:
(X) the specification filed herewith.
() application number, filed
() Patent No, issued
If the rights held by the above-identified small business concern are not exclusive, each individual, concern or organization having rights to the invention is listed below* and no rights to the invention are held by any person, other than the inventor, who could not qualify as an independent inventor under 37 C.F.R. §1.9(c) if that person made the invention, or by any concern which would not qualify as a small business concern under 7 C.F.R. §1.9(d) or a nonprofit organization under 37 C.F.R. §1.9(e). *NOTE: Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entities. (37 C.F.R. §1.27) Bull Name Address () Individual () Small Business Concern () Nonprofit Organization
, , , , _L
Full Name
Address
()Individual ()Small Business Concern ()Nonprofit Organization
Full NameAddress
()Individual ()Small Business Concern ()Nonprofit Organization
I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate (37 C.F.R. §1.28(b)).

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge

that willful false statements and the like so made are punishable by line or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeoperdize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

NAME OF PERSON SIGNING

Chris Gladwin

TITLE OF PERSON IF OTHER THAN OWNER

President and dEO

ADDRESS OF PERSON SIGNING

247 South State Street, Suite 122

Chicago, IL 60604

SIGNATURE

DATE

August Z9 2000

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CERTIFICATE OF MAILING BY "EXPRESS MAIL"

"Express Mail" Mailing Label Number

EL698010111US

Date of Deposit August 29, 2000
I hereby certify that this paper or fee is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" Service under 37 CFR §1.10 on the date indicated above and is addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231.

Molly Michaels

(Typed or printed name of person mailing)

 \bigcup

(Signature of person mailing)

STRUCTURE AND METHOD FOR SELECTING, CONTROLLING AND SENDING INTERNET-BASED OR LOCAL DIGITAL AUDIO TO AN AM/FM RADIO OR ANALOG AMPLIFIER

CROSS-REFERENCE TO RELATED APPLICATIONS

This application claims the benefit and priority of U.S. Provisional Application No. 60/151,714 filed on August 31, 1999.

BACKGROUND OF THE INVENTION

Field of the Invention:

The present invention relates to a structure and a method for selecting, controlling and sending Internet-based or digital audio to an AM/FM radio or amplifier.

Description of the Drawings:

There is an ever-increasing amount of audio content available as digital computer files (such as in the MP3 format like those found at www.mp3.com) or as streaming digital audio (such as using the streaming digital audio techniques in US Patent 5579430). These new types of audio content can be played on a personal computer with a sound card, but cannot be played on a radio or stereo that is designed to receive and amplify analog audio signals. There are several techniques for

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converting a digital audio source to an analog signal that could be used by analog radio or amplifier, but these techniques interfere with the operation of the host PC and would require use of the PC to select and control the audio, for example, on an analog radio. Thus, there is a need to provide a system which enables Internet-based or digital audio to be played, for example, on an analog radio without tying up a personal computer.

SUMMARY OF THE INVENTION

Briefly, the present invention relates to a system and method that allows a host PC to provide an analog audio signal for a radio or amplifier without interfering with the operation of the host PC. This invention also allows the audio signal to be selected and controlled by a remote device without interfering with the operation of the host PC.

BRIEF DESCRIPTION OF THE DRAWINGS

These and other advantages of the present invention will be readily apparent from the following specification and attached drawing wherein:

- FIG. 1 is a block diagram of the system in accordance with the present invention, shown connected to a host personal computer, which, in turn, is connected to the Internet.
- FIG. 2 is a front view of a remote device which forms a part of the present invention.
 - FIG. 3 is a block diagram of the remote device illustrated in FIG. 2.
- FIG. 4 is a block diagram of a PC adapter which forms a part of the present invention.
- FIG. 5 is a flow chart of a universal serial bus (USB) connection between the host PC and the PC adapter in accordance with the present invention.
- FIG. 6 is a block diagram of the PC software components in accordance with the present invention.

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FIG. 7 is a flow chart of the audio player in accordance with the present invention.

FIG. 8 is a flow chart of a remote device manager in accordance with the present invention.

FIG. 9 is a flow chart of the USB audio driver in accordance with the present invention.

FIG.10 is a flow chart of the USB remote device driver in accordance with the present invention.

DETAILED DESCRIPTION

The present invention is adapted to interface with a host personal computer (PC) which, in turn, is adapted to be connected to the Internet in order to obtain audio sources from the Internet or other digital audio sources from any web server. The system generally identified with the reference numeral 20. The system 20 is illustrated in FIG. 1 and includes a remote device 22, a PC adapter 24 and a host PC 26. The system 20 is adapted to enable various digital audio sources, for example, from the Internet or other digital audio sources, such as digital audio sources on any web server, to be played on an AM/FM radio or stereo amplifier 28 without interfering with the operation of the host PC 10.

SYSTEM COMPONENTS

Remote Device

The remote device 22 (FIG. 2) may have a 160x160 graphical display screen and control buttons. This display provides information about available audio content, information about how to select audio content, information about audio content that has been selected and other information. The control buttons are used to select and control audio content. As shown in FIG. 3, remote device 22 may connect to the PC adapter 24 over a radio link, for example, a 2-way wireless link.

The remote device 22 may have three buttons and one jogdial. Pressing the middle button brings back the previous screen. Pressing one of the other two

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buttons causes the content to be saved on host PC 26. Pressing the third button will initiate the purchase of the currently playing audio clip. The jogdial browses the list and pressing its middle button will selects and plays the clip.

PC Adapter

The PC adapter 24 connects the host PC 26 over a universal serial bus (USB) port and broadcasts analog radio data to the AM/FM radio and stereo amplifier 28. This analog audio data is converted from digital audio data and transmitted from the host PC over USB connection by the PC software as shown in FIG. 5. Also, it bridges 2-way data between remote device 22 and the host PC 26. A block diagram of the PC adapter 24 is illustrated in FIG. 4.

The microcontroller component encodes LCD display data and decodes button, dial and other remote control user inputs.

Proxy Server

The proxy server 29 serves as a digital audio portal site. The proxy server maintains a series of links to available digital audio sources on the Internet and formats information about these sites for display on the remote device 22.

PC Software

The PC software illustrated in FIG. 5 gets digital audio data from audio files on the local disk and/or internet streaming audio data. This data is organized as a play list. The play list is transferred to the remote device 22. The user selects and plays a clip by using the control buttons on the remote device 22. The remote device 22 then sends these commands to PC software which then plays this clip. The playing process is this: the PC software sends the address of the clip to the audio player. The audio player sends data to the USB audio driver which writes the audio data to USB. The PC adapter 24 will electronically converts the digital data into analog data and broadcast the data over an unused FM channel. This channel is selectable.

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FIG. 6 is a block diagram of the PC software components on the host PC 26 and includes a tuner 30, an audio player 32, a remote device manager 34, universal serial bus (USB) audio driver 36 and a USB remote device driver 38. FIGS 7-10 represent flow charts of the devices. A brief description of the software components is provided below.

Tuner

The tuner software allows the user to select internet radio stations, local digital audio files, and internet streaming audio to create playlists.

Audio Player

The audio player software plays audio and runs in the background. It functions in a similar way as other popular audio players, like Reaknetwork=s G2 player and Microsoft=s Windows Media Player. FIG. 7 is a flowchart of the audio player.

USB Remote Device Driver

This driver receives data from remote device manager and writes it to remote device 22 through a USB port. Also, it receives data from remote device 22 through the USB port and forwards it to remote device manager. FIG. 10 is a flow chart of the USB remote device driver.

Remote Device Manager

This component sends playlist and other information to the remote device 22, and it processes the commands sent from remote device 22. FIG. 8 is a flow chart of the remote device driver.

USB Audio Driver

This driver receives audio data from audio player and sends it to PC adapter 26 through USB connection. FIG. 9 is a flow chart of the USB audio driver.

follows:

Obviously, many modifications and variations of the present invention are possible in light of the above teachings. Thus, it is to be understood that, within the scope of the appended claims, the invention may be practiced otherwise than as specifically described above.

What is claimed and desired to be covered by a Letters Patent is as

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WE CLAIM:

1. A system for converting audio digital data to audio analog data, said system including a host personal computer (PC), configured to receive predetermined digital data, the system comprising:

a PC adapter configured to be operably connected to said PC adapter by way of a predetermined digital data bus, said PC adapter also configured to be connected to a remote analog device, and including means for receiving said digital audio data from said host PC and converting said digital audio data to analog audio data for playback by an analog device without interfering with the operation of the host PC.

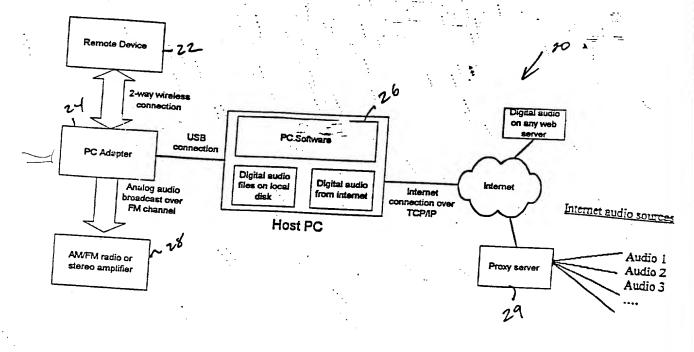
- 2. The system as recited in claim 1, wherein said analog device is located remotely from said PC adapter.
- 3. The system as recited in claim 2, wherein said analog device is coupled to said PC adapter by way of a radio link.
- 4. The system as recited in claim 1, further including a remote device, said remote device including means for selecting said digital data.
- 5. The system as recited in claim 4, wherein said remote device is operatively connected to said PC adapter by way of a radio link.
- 6. The system as recited in claim 1, wherein said digital data bus is a serial bus.
- 7. The system as recited in claim 6, wherein said serial bus is a universal serial bus (USB)

- 8. The system as recited in claim 1, wherein said analog device is a radio.
- 9. The system as recited in claim 1, wherein said analog device is an amplifier.

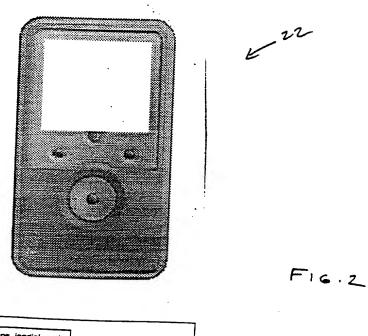
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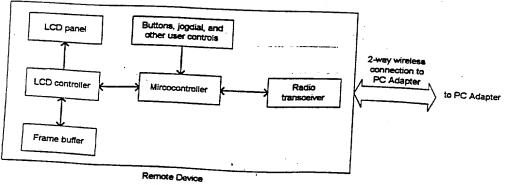
ABSTRACT OF THE DISCLOSURE

A system and method that allows a host PC to provide an analog audio signal for a radio or amplifier without interfering with the operation of the host PC. This invention also allows the audio signal to be selected and controlled by a remote device without interfering with the operation of the host PC.



F16.1





F16.3

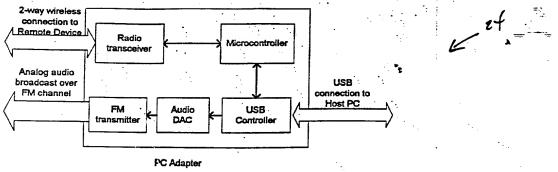
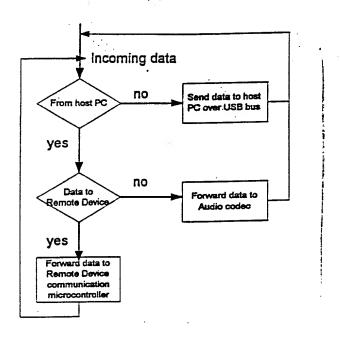
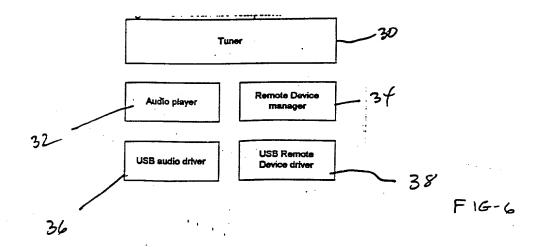
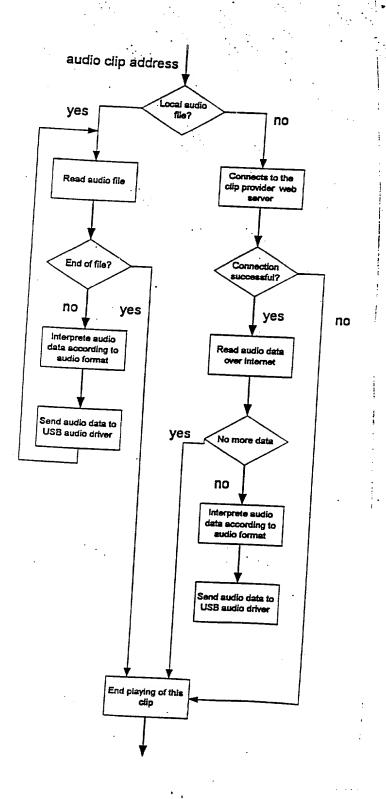


FIG 4.

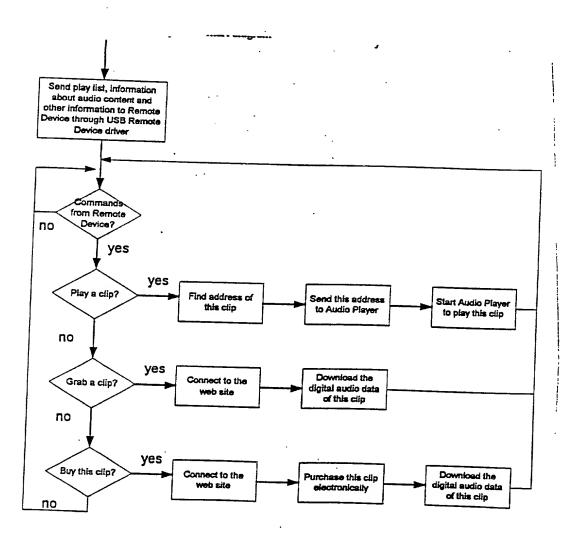


F165





F16.7



F16.8

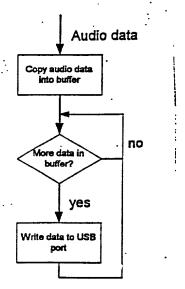
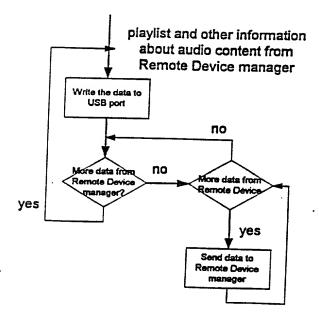


FIG.9



F.6.10

DECLARATION) FOR UTILITY OR DESIGN) PATENT APPLICATION)		Attorney Docket No.: 11748/00005First Named Inventor: Gladwin, et al.			
X Declaration Submitted With Initial Filing	Declaration) Submitted) After) Initial) Filing)	Application Number: Filing Date: Group Art Unit: Examiner Name:	N/A N/A N/A N/A		
As a below nam	ned inventor, I hereby declare t	hat:			
Tbelieve I am the foint inventor (in sought on the structure)	f plural names are listed below) invention entitled: TURE AND METHOD FOR ENET-BASED OR LOCAL D	tor (if only one name is of the subject matter w	listed below) or an original, first and hich is claimed and for which a patent representation of the control of		
Administration of the control of the	T)	itle of Invention)			
the specification	of which:				
(X) is a	ttached hereto, or				
() was	filed by an authorized person	on my behalf on	(Date)		
(s United States Application Not PCT International Application and was amended on(Date)	on Number	-		

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, §1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, §119(a)-(d) or §365(b) of any foreign application(s) for patent or inventor's certificate, or §365(a) of any PCT international application which designated at least one country other than the United States of America, listed below, and I have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or any PCT international application, on this invention filed by me or my legal representatives or assigns and having a filing date before that of the application on which priority is claimed:

Prior Foreign			Certi	fied			
Application	Foreign	Priority	Copy	Attached	1		
Number(s)	Country	Filing Date	Not (Claimed	Yes	No	_
Promuse Manufacture							
TO CANADA CONTROL CONT							
☐ ☐ Additional for	eign applicati	ion numbers a	re list	ed on a si	upplem	ental	
priority data sh					1.1		
∯hereby claim t	he benefit un	der Title 35.	Unite	d States (Code, 8	\$119(e	e) of any United States provisional
application(s) lis	ted below:	······,			, ,	, (.	,
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□ Additional pre	:-:-:11	:4:		1:-4-3		.1	4-1

☐ Additional provisional application numbers are listed on a supplemental priority data sheet attached hereto.

I hereby claim the benefit under Title 35, United States Code, §120, of any prior United States application(s), or under §365(c) of any PCT international application(s) designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application(s) in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose all information known by me to be material to patentability as defined in Title 37, Code of Federal Regulations, §1.56, which became available between the filing date of the prior application(s) and the national or PCT international filing date of this application:

Filing Date of Prior PCT U.S. or PCT

Prior U.S. International International Patent Number

Application Number Application (if applicable)

☐ Additional U.S.	or PCT internation	al application	numbers :	are listed	on
a supplemental p	riority data sheet att	ached hereto.			

As a named inventor, I hereby appoint the following registered practitioners, with full power of substitution and revocation, to prosecute this application and to transact all business in the United States Patent and Trademark Office connected therewith, and request that all correspondence and telephone calls in respect to this application be directed to KATTEN MUCHIN ZAVIS, Suite 1600, 525 West Monroe Street Chicago, Illinois, 60661, Telephone No. (312) 902–5312, Facsimile No. (312) 577-4532:

Registered Practitioner	Registration <u>Number</u>
Timothy J. Vezeau	26,348
John S. Paniaguas	31,051
Scott B. Dunbar	37,124
Martin T. LeFevour	37,378
Jane J. Choi	39,980
Michael A. Dorfman	P-46,669

Thereby declare that all statements made herein of my own knowledge are true, and that all statements made herein on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may epopardize the validity or enforceability of the application or any patent issued thereon.

Full name of sole or one

joint inventor: <u>Stephen Christopher Gladwin</u>
(Given names first, with Family name last)

(Great matter titlet, with 1 aims) matter tase,

Inventor's signature:

Date: August 2,9,2000

Residence: Chicago, IL

(City and State for U.S. Residents; City and Country for others)

Post Office Address: 2001 West Wabanasia Ave., #301

Chicago, IL 60647

Citizenship: U.S.A.

Full name of sole or one	
joint inventor:	Depeng (No Middle Name) Bi
	(Given names first, with Family name last)
Inventor's signature:	20/
D (29 2000
Date:	August 29, 2000
Residence:	Algonquin, IL
Residence.	(City and State for U.S. Residents;
	City and Country for others)
Post Office Address:	500 Old Oak Circle
	Algonquin, IL 60102
Citizenship: Full name of sole or one	
Alain and in	Decades Demuklic of China
tarizensnip:	Peoples Republic of China
Tour	
Full name of sole or one	
joint inventor:	Jeffrey Jonathan Spurgat
=	(Given names first, with Family name last)
Inventor's signature:	Jeffing Janathan Springet
	I W I I I
Date:	August 29, 2000
Residence:	Madison, WI
	(City and State for U.S. Residents;
	City and Country for others)
Post Office Address:	7117 New Washburn Way
Tost Office Address.	7117 New Washburn Way
	Madison, WI 53719
Citizenship:	U.S.A.

Full name of sole or one	
joint inventor:	Michael (No Middle Name) Cortopassi
	(Given names first, with Family name last)
	Cha A
Inventor's signature:	August 29, 2000
Date:	August 29 , 2 000
	•
Residence:	Arlington Heights, IL
	(City and State for U.S. Residents;
	City and Country for others)
Post Office Address:	2210 North Brighton
	Arlington Heights, IL 60004
===4	
€itizenship:	U.S.A.
Eitizenship: Supples Additional foreign application numbers:	
Supple:	mental Data Priority Sheet
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#### 1	
Additional foreign application numbers:	
Prior Foreign	Certified
Application Foreign Priority	Copy Attached
	Not Claimed Yes No
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☐ Additional provisional application number	ers:
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	Provisional Application Provisional Application
	Number(s) Filing Date
☐ Additional U.S. or PCT international ap	plication numbers:
	<u>.</u>

Filing Date of Prior PCT U.S. or PCT Prior U.S. International International Patent Number

Application Number Application Number Application (if applicable)